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## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | CP-2019-01-04-12 **Date: 25-10-18** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura, Sub Division, BBMP,Bangalore. |
| **Project Name** | : | Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/144/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 22-10-18 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 (Part 1,2 3,4,5, 6,11):1988<br>IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4<br>IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5<br>IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5<br>IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6 |
| **Date of test** | : | 23-10-18 |
| **Environmental Conditions during test** | : | Temperature: 26°C<br>Humidity: 72% |

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | Fineness by dry sieving (%) | 2.46 | – |
| 2 | Finess by Air permeablity method ($m^2$/kg,Min) | 255.8 | 225$m^2$/kg, Min |
| 3 | Density (gm/cc) | 3.12 | – |
| 4 | Standard Consistency (%) | 28.5% | Not specified |
| 5 | Initial Setting time | 175 minutes | Not less than 30 minutes |
| 6 | Final Setting time | 280 minutes | Not more than 600 minutes |
| 7 | Soundness (Le Chatelier's Method) | 1mm | Not more than 10 mm |

**Note:**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-01-04-12** **Date: 20-11-18** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura, Sub Division, BBMP,Bangalore. |
| **Project Name** | : | Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/144/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 22-10-18 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 6, Determination of Compressive Strength, Clause 6 |
| **Date of test** | : | 23-10-18 |
| **Environmental Conditions during test** | : | Temperature: 26˚C<br>Humidity: 72% |

**Compressive Strength**

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | 3 Days | 28.9N/mm$^2$ | Not less than 27 N/mm$^2$ |
| 2 | 7 Days | 39.2N/mm$^2$ | Not less than 37 N/mm$^2$ |
| 3 | 28 Days | 58.4N/mm$^2$ | Not less than 53 N/mm$^2$ |

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-01-04-12** **Date: 25-10-18** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura, Sub Division, BBMP,Bangalore. |
| **Project Name** | : | Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/144/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample condition** | : | Satisfactory |
| **Date of Receipt** | : | 22-10-18 |
| **Sample Type** | : | 40mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 22-10-18 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:**

**Total weight taken : 15000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 80 mm | 0 | 0 | 0.0 | 100 | 100 |
| 2 | 40 mm | 234 | 234 | 1.6 | 98.4 | 90-100 |
| 3 | 20 mm | 5334 | 5568 | 37.1 | 62.9 | 30-70 |
| 4 | 10 mm | 4788 | 10356 | 69.0 | 31.0 | 10-35 |
| 5 | 4.75 mm | 4354 | 14710 | 98.1 | 1.9 | 0-5 |
| 6 | Pan | 290 | 15000 | 100.0 | 0 | --- |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-2019-01-04-12** **Date: 25-10-18**

**PHYSICAL PROPERTIES**

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 12.2 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 11.6 | |
| 3 | Specific Gravity | 2.69 | – |
| 4 | Bulk Density(Loose) (Kg/l) | 1.54 | – |
| 5 | Bulk Density(Compacted) (Kg/l) | 1.58 | – |
| 6 | Water Absorption(%) | 0.24 | – |

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-01-04-12** **Date: 25-10-18** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura, Sub Division, BBMP,Bangalore. |
| **Project Name** | : | Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer Reference** | : | BBMP/EE/BTP/WO/144/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 22-10-18 |
| **Sample Type/ Size** | : | 20mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 22-10-18 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:**

**Total weight taken : 5000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 40 mm | 0 | 0 | 0 | 100 | 100 |
| 2 | 20 mm | 245 | 245 | 4.9 | 95.1 | 90-100 |
| 3 | 10 mm | 2675 | 2920 | 58.4 | 41.6 | 25-55 |
| 4 | 4.75 mm | 1798 | 4718 | 94.4 | 5.6 | 0-10 |
| 5 | Pan | 282 | 5000 | 100 | 0 | _ |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-2019-01-04-12** **Date: 25-10-18**

### PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 11.4 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 11.2 | |
| 3 | Specific Gravity | 2.64 | – |
| 4 | Bulk Density(Loose) (Kg/l) | 1.52 | – |
| 5 | Bulk Density(Compacted) (Kg/l) | 1.56 | – |
| 6 | Water Absorption(%) | 0.24 | – |
| 7 | Aggregate crushing Value(%) | 22.6 | Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface. |
| 8 | Aggregate Impact Value(%) | 21.8 | 30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface. |

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**Quality Manager**

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# TEST REPORT OF FINE AGGREGATE

**Lab ID** : **CP-2019-01-04-12** **Date: 25-10-18**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura, Sub Division, BBMP,Bangalore.

**Project Name** : Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 22-10-18

**Sample Type** : Fine Aggregate

**Reference to BIS codes** : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

**Date of test** : 22-10-18

**Total weight taken** : 1000 grams

| Sl.no | Sieve Size | Weight Retained (gms) | Cumulative Weight Retained (gms) | % Cumulative Weight Retained | % Passing | Requirement as per IS 383:2016 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Grading Zone I | Grading Zone II | Grading Zone III | Grading Zone IV |
| 1 | 10 mm | 0 | 0 | 0.0 | 100.0 | 100 | 100 | 100 | 100 |
| 2 | 4.75 mm | 82 | 82 | 8.2 | 91.8 | 90-100 | 90-100 | 90-100 | 95-100 |
| 3 | 2.36 mm | 165 | 247 | 24.7 | 75.3 | 60-95 | 75-100 | 85-100 | 95-100 |
| 4 | 1.18 mm | 177 | 424 | 42.4 | 57.6 | 30-70 | 55-90 | 75-100 | 90-100 |
| 5 | 600 micron | 182 | 606 | 60.6 | 39.4 | 15-34 | 35-59 | 60-79 | 80-100 |
| 6 | 300 micron | 177 | 783 | 78.3 | 21.7 | 5-20 | 8-30 | 12-40 | 15-50 |
| 7 | 150 micron | 134 | 917 | 91.7 | 8.3 | 0-10 | 0-10 | 0-10 | 0-15 |
| 8 | Pan | 83 | 1000 | 100.0 | 0.0 | --- | --- | --- | --- |
| **Result :The tested Sample Conforms to Grading Zone II** | | | | | | | | | |



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# TEST REPORT OF FINE AGGREGATE

**Lab ID** : **CP-2019-01-04-12** **Date: 25-10-18**

## PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS 383:2016 |
|---|---|---|---|
| 1 | Water Absorption(%) | 1.86 | – |
| 2 | Specific Gravity | 2.59 | – |
| 3 | Material finer than 75 micron(%) | 7.8 | Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10% |

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# TEST RESULTS OF STEEL

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-01-04-12** **Date: 07-11-18** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura, Sub Division, BBMP,Bangalore. |
| **Project Name** | : | Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/144/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 06-11-18 |
| **Sample Type** | : | Sunvik |
| **Reference to BIS codes** | : | IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012. |
| **Date of test:** | : | 06-11-18 |

| Sl.No | Identification of sample | Grade of the sample | Diameter of the steel bar | Weight of the sample | Yield stress | Tensile strength | Elongation | Bend test | Rebend test |
|---|---|---|---|---|---|---|---|---|---|
| | | | (mm) | (kg/m) | (N/mm2) | (N/mm2) | (%) | | |
| 1 | Sunvik | Fe500 | 8 | 0.392 | 512 | 652 | 20.0% | Satisfactory | Satisfactory |
| 2 | Sunvik | Fe500 | 10 | 0.614 | 528 | 672 | 20.0% | Satisfactory | Satisfactory |
| 3 | Sunvik | Fe500 | 12 | 0.887 | 546 | 668 | 20.0% | Satisfactory | Satisfactory |

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# TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-01-04-12** **Date: 02-11-18** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura, Sub Division, BBMP,Bangalore. |
| **Project Name** | : | Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/144/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 29-10-18 |
| **Sample Type/Size** | : | Solid concrete blocks size (400X200X200)mm |
| **Reference to BIS codes** | : | IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex -C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10) |
| **Date of test** | : | 29-10-18 |

**BLOCK DENSITY:**

| Sl. No. | Measurement of overall Dimensions of Individual Blocks | | | Overall Volume of the Block in Cubic Centimetres | Weight of Oven Dried Block in Kilograms to the nearest 10 Gram | Block Density in Kg/cum*$10^6$ | Avg.Block Density in (Kg/cum) | As per IS 2185(Part 1) :2005 (RA 2010) |
|---|---|---|---|---|---|---|---|---|
| | Length | Breadth | Height | | | | | |
| | mm | mm | mm | ($Cm^3$) | Kg | $Kg/m^3$ | $Kg/m^3$ | |
| 1 | 402 | 202 | 203 | 16484 | 29.750 | 1804.7 | 1824.1 | Not less than 1800$Kg/m^3$ |
| 2 | 401 | 200 | 201 | 16120 | 29.630 | 1838.1 | | |
| 3 | 402 | 201 | 202 | 16322 | 29.860 | 1829.4 | | |

**WATER ABSORPTION:**

| Sl. No. | Wet weight after water absorption | Dry weight (Oven dry) | Water Absorption | Avg.Water Absorption | As per IS 2185(Part 1):2005 (RA 2010) |
|---|---|---|---|---|---|
| | kg | kg | % | % | |
| 1 | 26.130 | 24.820 | 5.28 | 5.27 | Shall not be more than 10% by mass |
| 2 | 26.120 | 24.800 | 5.32 | | |
| 3 | 25.820 | 24.540 | 5.22 | | |



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**Lab ID** : **CP-2019-01-04-12** **Date: 02-11-18**

**DIMENSION ANALYSIS**

| Sl.no | Length mm | Breadth mm | Height mm | Requirement as per IS 2185(Part 1):2005 |
|---|---|---|---|---|
| 1 | 402 | 202 | 201 | Length : ± 5mm<br>Breadth : ± 3mm<br>Height : ± 3mm |
| 2 | 401 | 201 | 203 | |
| 3 | 403 | 203 | 201 | |
| 4 | 402 | 201 | 203 | |
| 5 | 401 | 203 | 201 | |
| 6 | 402 | 202 | 199 | |
| 7 | 403 | 201 | 202 | |
| 8 | 401 | 203 | 201 | |
| 9 | 403 | 201 | 203 | |
| 10 | 401 | 203 | 201 | |
| 11 | 402 | 202 | 203 | |
| 12 | 403 | 203 | 201 | |
| 13 | 401 | 201 | 200 | |
| 14 | 402 | 203 | 201 | |
| 15 | 401 | 200 | 203 | |
| 16 | 403 | 202 | 201 | |
| 17 | 401 | 201 | 203 | |
| 18 | 402 | 203 | 201 | |
| 19 | 403 | 200 | 203 | |
| 20 | 404 | 203 | 201 | |
| Average of 20 | **402** | **202** | **202** | |



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**Lab ID** : **CP-2019-01-04-12** **Date: 02-11-18**

**COMPRESSIVE STRENGTH:**

| Sl. No. | Size of solid block | | Area | Failure Load | Compressive strength | Average Compressive strength |
|---|---|---|---|---|---|---|
| | Length | Breadth | | | | |
| | mm | mm | ($mm^2$) | (KN) | $N/mm^2$ | ($N/mm^2$) |
| 1 | 402 | 202 | 81204 | 334.6 | 4.1 | 4.2 |
| 2 | 401 | 201 | 80601 | 352.8 | 4.4 | |
| 3 | 403 | 203 | 81809 | 343.1 | 4.2 | |
| 4 | 402 | 201 | 80802 | 329.9 | 4.1 | |
| 5 | 401 | 203 | 81403 | 345.2 | 4.2 | |
| 6 | 402 | 202 | 81204 | 351.9 | 4.3 | |
| 7 | 403 | 201 | 81003 | 323.6 | 4.0 | |
| 8 | 401 | 203 | 81403 | 341.5 | 4.2 | |

**As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)**

| Compressive strength | | |
|---|---|---|
| **Grade** | **Minimum average** | **Minimum Individual units.** |
| C (5.0) | 5.00 $N/mm^2$ | 4.00 $N/mm^2$ |
| C (4.0) | 4.00 $N/mm^2$ | 3.20 $N/mm^2$ |

**Note:**
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**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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# TEST REPORT OF CEMENT CONCRETE KERB STONE

**Lab ID** : **CP-2019-01-04-12** **Date: 16-11-18**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura, Sub Division, BBMP,Bangalore.

**Project Name** : Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 12-11-18

**Sample Type /Size** : CC Kerb Stone/ 450*165*400mm

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete

**Date of test** : 12/11/2018

| Sl. No. | Identification Mark | Diameter of the core | Height of the core | Weight of the core | Area | Failure Load | Core Compressive strength | Corrected Cylinder Compressive strength | Equivalent Cube Compressive strength |
|---|---|---|---|---|---|---|---|---|---|
| | | (mm) | (mm) | Kg | (Sq.mm) | (KN) | (N/mm2 ) | (N/mm2 ) | (N/mm2 ) |
| 1 | A | 100.01 | 165.51 | 2.864 | 7854 | 142.1 | 18.1 | 18.1 | 22.6 |
| 2 | B | 100.03 | 165.49 | 2.793 | 7857 | 145.2 | 18.5 | 18.5 | 23.1 |
| 3 | C | 100.01 | 165.50 | 2.815 | 7854 | 145.1 | 18.5 | 18.5 | 23.1 |

**Note:**

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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2019-01-04-12** **Date: 29/11/2018**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura, Sub Division, BBMP,Bangalore.

**Project Name** : Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 24-11-18

**Customer ID** : M20 Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 29/11/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 149.61 X 151.44 X 151.31 | 22657 | **8.854** | 428.8 | 18.9 | 18.6 |
| 2 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 151.79 X 149.69 X 151.21 | 22721 | **8.047** | 419.5 | 18.5 | |
| 3 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 149.69 X 150.65 X 149.42 | 22551 | **8.957** | 414.4 | 18.4 | |

**Note:**

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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2019-01-04-12** **Date: 20/12/2018**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura, Sub Division, BBMP,Bangalore.

**Project Name** : Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 24-11-18

**Customer ID** : M20 Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 20/12/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 149.33 X 151.23 X 150.95 | 22584 | **8.810** | 536.8 | 23.8 | 23.2 |
| 2 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 149.68 X 150.79 X 150.79 | 22570 | **8.871** | 515.9 | 22.9 | |
| 3 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 149.86 X 150.30 X 150.31 | 22523 | **8.612** | 520.6 | 23.1 | |

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Authorized Signatory
Quality Manager

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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2019-01-04-12** **Date: 29/11/2018**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura, Sub Division, BBMP,Bangalore.

**Project Name** : Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 24-11-18

**Customer ID** : M20 Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 29/11/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 151.06 X 149.26 X 149.88 | 22549 | **8.833** | 422.7 | 18.7 | 18.6 |
| 2 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 149.99 X 151.20 X 150.75 | 22679 | **8.902** | 415.6 | 18.3 | |
| 3 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 150.20 X 150.41 X 149.94 | 22591 | **8.795** | 424.0 | 18.8 | |

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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2019-01-04-12** **Date: 20/12/2018**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura, Sub Division, BBMP,Bangalore.

**Project Name** : Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 24-11-18

**Customer ID** : M20 Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 20/12/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 149.03 X 149.96 X 149.99 | 22349 | **8.961** | 530.3 | 23.7 | 23.3 |
| 2 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 151.54 X 149.12 X 149.78 | 22597 | **8.076** | 508.3 | 22.5 | |
| 3 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 151.51 X 150.42 X 151.23 | 22791 | **8.583** | 540.0 | 23.7 | |

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Authorized Signatory
**Quality Manager**

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# TEST REPORT OF CEMENT CONCRETE CUBES

**Date: 29/11/2018**

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-01-04-12** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura, Sub Division, BBMP,Bangalore. |
| **Project Name** | : | Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/144/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 24-11-18 |
| **Customer ID** | : | M20 Concrete |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 29/11/2018 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 150.26 X 151.54 X 150.67 | 22771 | **8.746** | 414.3 | 18.2 | 18.4 |
| 2 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 149.23 X 149.99 X 150.38 | 22384 | **8.701** | 408.5 | 18.3 | |
| 3 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 149.68 X 149.61 X 150.58 | 22393 | **8.755** | 419.6 | 18.7 | |

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Authorized Signatory
**Quality Manager**

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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2019-01-04-12** **Date: 20/12/2018**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura, Sub Division, BBMP,Bangalore.

**Project Name** : Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 24-11-18

**Customer ID** : M20 Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 20/12/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 150.47 X 149.03 X 149.99 | 22424 | **8.384** | 534.5 | 23.8 | 23.5 |
| 2 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 150.45 X 150.00 X 150.00 | 22567 | **8.301** | 517.8 | 22.9 | |
| 3 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 151.94 X 151.25 X 150.95 | 22981 | **8.689** | 542.4 | 23.6 | |

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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2019-01-04-12** **Date: 29/11/2018**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura, Sub Division, BBMP,Bangalore.

**Project Name** : Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 24-11-18

**Customer ID** : M20 Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 29/11/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 149.35 X 151.35 X 151.45 | 22604 | **8.641** | 412.5 | 18.3 | 18.4 |
| 2 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 149.70 X 149.26 X 150.86 | 22343 | **8.056** | 418.3 | 18.7 | |
| 3 | M20 Concrete | M20 | 22/11/2018 | 29/11/2018 | 149.59 X 150.35 X 149.82 | 22491 | **8.993** | 410.4 | 18.2 | |

**Note:**

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**R.KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**

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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2019-01-04-12** **Date: 20/12/2018**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura, Sub Division, BBMP,Bangalore.

**Project Name** : Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 24-11-18

**Customer ID** : M20 Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 20/12/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 149.26 X 149.54 X 149.91 | 22320 | **8.873** | 529.3 | 23.7 | 23.4 |
| 2 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 149.24 X 149.81 X 151.22 | 22357 | **8.398** | 507.4 | 22.7 | |
| 3 | M20 Concrete | M20 | 22/11/2018 | 20/12/2018 | 150.92 X 151.40 X 151.63 | 22850 | **8.358** | 545.1 | 23.9 | |

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ಸಹಾಯಕ ಅಭಿಯಂತರರು
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**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**

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****End of Report****

Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2019-01-04-12** **Date: 13/12/2018**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura, Sub Division, BBMP,Bangalore.

**Project Name** : Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 08-12-18

**Customer ID** : M20 Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 13/12/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 06/12/2018 | 13/12/2018 | 149.47 X 151.29 X 150.14 | 22612 | **8.298** | 416.1 | 18.4 | 18.6 |
| 2 | M20 Concrete | M20 | 06/12/2018 | 13/12/2018 | 151.67 X 151.60 X 150.31 | 22994 | **8.410** | 429.4 | 18.7 | |
| 3 | M20 Concrete | M20 | 06/12/2018 | 13/12/2018 | 151.67 X 151.92 X 151.33 | 23041 | **8.011** | 428.6 | 18.6 | |

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**

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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2019-01-04-12** **Date: 03/01/2019**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura, Sub Division, BBMP,Bangalore.

**Project Name** : Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division

**Agency** : Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010.

**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 08-12-18

**Customer ID** : M20 Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 03/01/2019

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 06/12/2018 | 03/01/2019 | 150.59 X 149.27 X 149.81 | 22479 | **8.233** | 536.3 | 23.9 | 23.4 |
| 2 | M20 Concrete | M20 | 06/12/2018 | 03/01/2019 | 151.43 X 149.65 X 149.02 | 22661 | **8.956** | 513.9 | 22.7 | |
| 3 | M20 Concrete | M20 | 06/12/2018 | 03/01/2019 | 150.40 X 150.76 X 151.65 | 22674 | **8.843** | 538.3 | 23.7 | |

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# TEST REPORT OF CEMENT CONCRETE CUBES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2019-01-04-12** **Date: 13/12/2018** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura, Sub Division, BBMP,Bangalore. |
| **Project Name** | : | Construction of Day- Nalm Project Ashraya Yojana Building at Defence Layout in Ward No.05 Byatarayanapura Sub Division |
| **Agency** | : | Executive Engineer, KRIDL, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/144/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 08-12-18 |
| **Customer ID** | : | M20 Concrete |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 13/12/2018 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength (N/mm$^2$) | Average Compressive Strength (N/mm$^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 06/12/2018 | 13/12/2018 | 150.08 X 149.41 X 149.01 | 22423 | **8.336** | 408.1 | 18.2 | 18.6 |
| 2 | M20 Concrete | M20 | 06/12/2018 | 13/12/2018 | 151.69 X 150.52 X 149.22 | 22832 | **8.652** | 431.0 | 18.9 | |
| 3 | M20 Concrete | M20 | 06/12/2018 | 13/12/2018 | 149.87 X 149.99 X 150.31 | 22479 | **8.629** | 421.2 | 18.7 | |

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# TEST REPORT OF CEMENT CONCRETE CUBES

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**Customer's Reference** : BBMP/EE/BTP/WO/144/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 08-12-18

**Customer ID** : M20 Concrete

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 03/01/2019

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M20 Concrete | M20 | 06/12/2018 | 03/01/2019 | 150.33 X 149.48 X 150.51 | 22471 | **8.943** | 520.5 | 23.2 | 23.2 |
| 2 | M20 Concrete | M20 | 06/12/2018 | 03/01/2019 | 150.32 X 149.05 X 149.32 | 22405 | **8.295** | 512.8 | 22.9 | |
| 3 | M20 Concrete | M20 | 06/12/2018 | 03/01/2019 | 149.29 X 149.56 X 150.92 | 22329 | **8.741** | 528.2 | 23.7 | |

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Authorized Signatory
Quality Manager

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